

California Antibigram Project

Kavita K. Trivedi, MD
Public Health Medical Officer
Healthcare Associated Infections Program
California Department of Public Health
*Please mute phones by pressing *6*



Outline

- Antibigrams
- Rationale and Limitations to Statewide Antimicrobial Susceptibility Monitoring
- California Antibigram Project
 - Objectives
 - Information collected
 - How to participate
- Preparation of a Cumulative Antibigram at the Local Level
- Questions?

2



Antibiograms: Acute Care

- Required annually by The Joint Commission for acute care hospitals
- Table that lists commonly encountered organisms and the percentages of each that are susceptible to various antimicrobial agents that might be used in treating infections caused by those organisms
- Derived from cumulative antimicrobial susceptibility data from clinical cultures
 - Guide for empiric therapy
 - Monitor susceptibility trends

3



Antibiograms: Long-Term Care

- Laboratories servicing long-term care facilities can develop if requested
- Best practice: one SoCal hospital develops and utilizes nursing home-specific antibiograms
- Previous California regional antibiogram data has been very useful for nursing homes without susceptibility data

4



Local Antibigrams

- Caveats:
 - Not well distributed
 - Not well utilized
 - No opportunity to benchmark and compare resistance with other institutions

5



Rationale for Statewide Monitoring of Antimicrobial Resistance

- Monitor susceptibility trends
- Raise awareness of resistance problems
- Identify opportunities to reduce inappropriate antimicrobial use
- Measure success of recommendations and interventions designed to combat resistance
- Identify opportunities to develop better tests to detect and characterize drug-resistant organisms

6



Rationale for Statewide Monitoring of Antimicrobial Resistance

- Be prepared for introduction of new resistant organisms that may be associated with institutional and community outbreaks and individual cases of severe illness
- Develop recommendations to assist local health departments in the control and spread of drug-resistant organisms

7



Options for Obtaining Antimicrobial Resistance Data at the State Level

- Active surveillance
 - Collect actual isolates for susceptibility testing in reference laboratory
- Aggregate cumulative antibiogram data
 - Collect cumulative antibiograms from individual clinical laboratories
 - Calculate % Susceptible from aggregate data

8



Advantages of Aggregated Cumulative Antibiogram Data

- Feasible, inexpensive, relatively rapid, and relatively accurate
- Relatively small burden for clinical laboratory personnel; minimal additional work for local and state health departments

9



Disadvantages of Aggregated Cumulative Antibiogram Data

- Resistance identified in population served by individual hospital may not reflect resistance in surrounding areas
- Does not allow evaluation by age or other variables of interest such as race or gender
- Lack of patient- and case- specific data eliminates opportunity for more in-depth analyses

10



Accuracy of Aggregated Cumulative Antibiogram Data

- Studies have compared aggregated cumulative antibiogram data vs. active surveillance
- Both appear to provide accurate estimates of prevalence of drug-resistant *S. pneumoniae**
- Results can be improved by attaining consistency among facilities by following CLSI guidelines

11 Chin (1999) and Van Beneden (2003)



California Antibiogram Project

- 48 laboratories representing 79 hospitals contributed data from 2007
- State and regional antibiograms compiled
- Publicly posted
- Lost support in 2009

12 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject2007.aspx>



Revival of California Antibioqram Project

- HAI Program
- All hospitals are eligible to participate
- Web-based data entry only
 - Data outside of the standard format will not be accepted
- **2008-2010**
 - May take 30 minutes to fill out
 - Any yearly portion will be accepted

13 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>



Revival of California Antibioqram Project

- Specific organism-antimicrobials combinations
 - 7 organisms and 21 antimicrobial classes
 - All specimen sites (blood, urine, wound not separated)
 - Clinical and Laboratory Standards Institute (CLSI) guidelines
 - Information on how isolates were collected

14 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>



Organism-Antimicrobial Combinations

Organism	Drugs
<i>Enterococcus spp.</i>	Vancomycin
<i>Staphylococcus aureus</i>	Oxacillin Clindamycin Tetracycline or Doxycycline or Minocycline Trimethoprim/sulfamethoxazole Rifampin
<i>Klebsiella spp.</i>	Ceftioxone or Cefotaxime Imipenem or Meropenem or Doripenem
<i>Escherichia coli</i>	Ceftioxone or Cefotaxime Ciprofloxacin or Levofloxacin
<i>Enterobacter cloacae</i>	Cefepime Imipenem or Meropenem or Doripenem Ciprofloxacin or Levofloxacin Ceftazidime
<i>Acinetobacter baumannii</i>	Imipenem or Meropenem or Doripenem
<i>Pseudomonas aeruginosa</i>	Imipenem or Meropenem or Doripenem Ciprofloxacin or Levofloxacin Gentamicin or Tobramycin Amikacin Cefepime or ceftazidime Piperacillin/tazobactam

15



Revival of California Antibioqram Project

- Carbapenem resistant *Enterobacteriaceae* (CRE) and Extended-spectrum β -lactamases (ESBLs)
- Trend 2007-2010 will be extremely useful
- Statewide data will be posted on CDPH HAI Program website

16 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>



How to Participate

- www.surveymonkey.com/s/CaliforniaAntibiogramProject
- Personal identifiers optional
- Hospital characteristics required
- Enter data annually
- Please ensure only one person from your hospital participates
- **Deadline: October 31, 2011**

17 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>



Additional Participants

- Please pass along to others
 - Need representative sample of hospitals to make this useful for all
- Additional information for registration/participation posted on website

18 <http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>



Questions/Comments

Please email:

CDPHCaliforniaAntibiogramProject@cdph.ca.gov

Visit:

<http://www.cdph.ca.gov/programs/hai/Pages/CaliforniaAntibiogramProject.aspx>

19



Antimicrobial Resistance – a World Wide Problem



20

